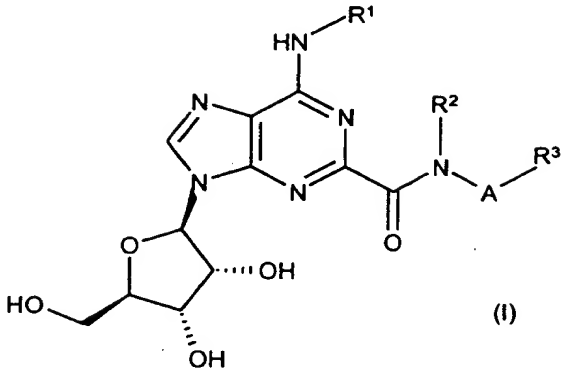
CLAIMS

1. A compound of the formula:



(I)

or a pharmaceutically acceptable salt or solvate thereof,

wherein R^1 is hydrogen or C_1-C_6 alkyl optionally substituted by 1 or 2 substituents each independently selected from phenyl and naphthyl, said phenyl and naphthyl being optionally substituted by C_1-C_6 alkyl, C_1-C_6 alkoxy, halo or cyano;

R^2 is H or C_1-C_6 alkyl;

A is C_1-C_6 alkylene;

R^3 is (i) hydrogen, C_1-C_6 alkyl, -$COOR^4$, -CN, –$CONR^4R^4$, C_3-C_8 cycloalkyl, phenyl or naphthyl, said C_3-C_8 cycloalkyl, phenyl and naphthyl being optionally substituted by C_1-C_6 alkyl, phenyl, C_1-C_6 alkoxy(C_1-C_6)alkyl, $R^4R^4N(C_1$-$C_6)$alkyl, halo(C_1-C_6)alkyl, fluoro(C_1-C_6)alkoxy, C_2-C_5 alkanoyl, halo, -OR^4, cyano, -$COOR^4$, C_3-C_8 cycloalkyl, -$S(O)_mR^5$, -NR^4R^4, -$SO_2NR^4R^4$, -$CONR^4R^4$, -NR^4COR^5 or -$NR^4SO_2R^5$,

or (ii) when A is C_2-C_6 alkylene, -NR^4R^4, -OR^4, -$OCOR^5$, -SO_2R^5, -$SO_2NR^4R^4$ or -NR^4COR^5,

or (iii) a C-linked, 4- to 11-membered ring, mono- or bicyclic, heterocycle having either from 1 to 4 ring nitrogen atom(s), or 1 or 2 nitrogen and 1 oxygen or 1 sulphur ring atoms, being optionally C-substituted by oxo, C_1-C_6 alkoxy(C_1-

C_6)alkyl, $R^6R^6N(C_1$-$C_6)$alkyl, halo(C_1-C_6)alkyl, fluoro(C_1-C_6)alkoxy, fluoro(C_2-C_5)alkanoyl, halo, cyano, -OR^6, R^7, -COR^6, -NR^6R^6, -$COOR^6$, -$S(O)_mR^7$, -$SO_2NR^6R^6$, -$CONR^6R^6$, -$NR^6SO_2R^7$ or –NR^6COR^7 and optionally N-substituted by C_1-C_6 alkoxy(C_1-C_6)alkyl, $R^6R^6N(C_2$-$C_6)$alkyl, halo(C_1-C_6)alkyl, fluoro(C_2-C_5)alkanoyl, R^7, -COR^6, -$COOR^7$, -SO_2R^7, -$SO_2NR^6R^6$ or –$CONR^6R^6$,

or (iv) when A is C_2-C_6 alkylene, N-linked azetidinyl, pyrrolidinyl, piperidinyl, piperazinyl, homopiperazinyl or morpholinyl, each being optionally C-substituted by C_1-C_6 alkyl, phenyl, C_1-C_6 alkoxy(C_1-C_6)alkyl, $R^4R^4N(C_1$-$C_6)$alkyl, halo(C_1-C_6)alkyl, fluoro(C_1-C_6)alkoxy, C_2-C_5 alkanoyl, halo, -OR^4, cyano, -$COOR^4$, C_3-C_8 cycloalkyl, -$S(O)_mR^5$, -NR^4R^4, -$SO_2NR^4R^4$, -$CONR^4R^4$, -NR^4COR^5 or -$NR^4SO_2R^5$, and said piperazinyl and homopiperazinyl being optionally N-substituted by C_1-C_6 alkyl, phenyl, C_1-C_6 alkoxy(C_2-C_6)alkyl, $R^4R^4N(C_2$-$C_6)$alkyl, fluoro(C_1-C_6)alkyl, C_2-C_5 alkanoyl, -$COOR^5$, C_3-C_8 cycloalkyl, -SO_2R^5, -$SO_2NR^4R^4$ or -$CONR^4R^4$;

R^4 is H, C_1-C_6 alkyl, C_3-C_8 cycloalkyl or phenyl;

R^5 is C_1-C_6 alkyl, C_3-C_8 cycloalkyl or phenyl;

R^6 is H, C_1-C_6 alkyl, C_3-C_8 cycloalkyl, phenyl, naphthyl or het;

R^7 is C_1-C_6 alkyl, C_3-C_8 cycloalkyl, phenyl, naphthyl or het;

m is 0, 1 or 2; and

"het", used in the definitions of R^6 and R^7, means C-linked pyrrolyl, imidazolyl, triazolyl, thienyl, furyl, thiazolyl, oxazolyl, thiadiazolyl, oxadiazolyl, pyridinyl, pyrimidinyl, pyridazinyl, pyrazinyl, indolyl, isoindolyl, quinolinyl, isoquinolinyl, benzimidazolyl, quinazolinyl, phthalazinyl, benzoxazolyl or quinoxalinyl, each being optionally substituted by C_1-C_6 alkyl, C_1-C_6 alkoxy, cyano or halo.

2. A compound as claimed in claim 1 wherein R^1 is C_1-C_6 alkyl optionally substituted by 1 or 2 phenyl substituents.

3. A compound as claimed in claim 2 wherein R^1 is 2,2-diphenylethyl.

~~4. A compound as claimed in any one of the preceding claims wherein R^2 is H.~~

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5. A compound as claimed in any one of the preceding claims wherein A is C_1-C_4 alkylene.

6. A compound as claimed in claim 5 wherein A is methylene, 1,2-ethylene or 1,3-propylene.

7. A compound as claimed in claim 6 wherein A is 1,2-ethylene.

8. A compound as claimed in any one of the preceding claims wherein R^3 is phenyl optionally substituted as defined for this definition in claim 1; or, when A is C_2-C_6 alkylene, R^3 is $-NR^4R^4$ wherein R^4 is as defined in claim 1; or R^3 is a C-linked, 5- to 7-membered ring monocyclic heterocycle having either from 1 to 4 ring nitrogen atom(s) or 1 or 2 nitrogen and 1 oxygen or 1 sulphur ring atoms, optionally substituted as defined for this definition in claim 1; or, when A is C_2-C_6 alkylene, R^3 is N-linked pyrrolidinyl, piperidinyl or morpholinyl, each being optionally C-substituted as defined for this definition in claim 1.

9. A compound as claimed in claim 8 wherein R^3 is phenyl; or, when A is C_2-C_6 alkylene, R^3 is $-NR^4R^4$ wherein R^4 is C_1-C_6 alkyl; or, R^3 is a C-linked, 5- or 6-membered ring monocyclic aromatic heterocycle having from 1 to 4 ring nitrogen atom(s), optionally substituted as defined for this definition in claim 1: or, when A is C_2-C_6 alkylene, R^3 is N-linked pyrrolidinyl, piperidinyl or morpholinyl, each being optionally C-substituted by C_1-C_6 alkyl or $-OR^4$ wherein R^4 is as previously defined in claim 1.

10. A compound as claimed in claim 9 wherein R^3 is phenyl; or, when A is C_2-C_6 alkylene, R^3 is $-N(CH_3)_2$; or R^3 is C-linked pyridinyl optionally substituted by $-OR^6$, R^7, C_1-C_6 alkoxy(C_1-C_6)alkyl, $R^6R^6N(C_1$-$C_6)$alkyl or $-NR^6R^6$ wherein R^6 and R^7 are as previously defined in claim 1; or when A is C_2-C_6 alkylene, R^3 is pyrrolidin-1-yl, piperidin-1-yl, 4-isopropylpiperidin-1-yl or morpholin-4-yl.

11. A compound as claimed in claim 10 wherein R^3 is phenyl; or, when A is C_2-C_6 alkylene, R^3 is $-N(CH_3)_2$; or R^3 is 2-pyridinyl; or when A is C_2-C_6 alkylene, R^3 is pyrrolidin-1-yl, piperidin-1-yl, 4-isopropylpiperidin-1-yl or morpholin-4-yl.

12. A compound as claimed in claim 11 wherein, when A is C_2-C_6 alkylene, R^3 is piperidin-1-yl.

13. A compound as claimed in any one of claims 1 to 4 wherein -A-R^3 is phenethyl, 2-(dimethylamino)ethyl, 2-pyridinylmethyl, 2-(2-pyridinyl)ethyl, 3-(1-pyrrolidinyl)propyl, 2-(1-piperidinyl)ethyl, 2-(4-isopropyl-1-piperidinyl)ethyl or 2-(4-morpholinyl)ethyl.

14. A compound as claimed in claim 13 wherein -A-R^3 is 2-(1-piperidinyl)ethyl.

15. A compound as claimed in claim 1 which is selected from the group consisting of

9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-*N*-[2-(1-piperidinyl)ethyl]-9*H*-purine-2-carboxamide;

9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-*N*-phenethyl-9*H*-purine-2-carboxamide;

9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-*N*-[2-(4-isopropyl-1-piperidinyl)ethyl]-9*H*-purine-2-carboxamide;

9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-*N*-[3-(1-pyrrolidinyl)propyl]-9*H*-purine-2-carboxamide;

9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-*N*-[2-(4-morpholinyl)ethyl]-9*H*-purine-2-carboxamide;

9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-*N*-(2-pyridinylmethyl)-9*H*-purine-2-carboxamide;

9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-*N*-[2-(2-pyridinyl)ethyl]-9*H*-purine-2-carboxamide; and 9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-*N*-[2-(dimethylamino)ethyl]-6-[(2,2-diphenylethyl)amino]-9*H*-purine-2-carboxamide: and the pharmaceutically acceptable salts and solvates thereof.

16. A compound as claimed in claim 1 which is 9-[(2*R*,3*R*,4*S*,5*R*)-3,4-dihydroxy-5-(hydroxymethyl)tetrahydro-2-furanyl]-6-[(2,2-diphenylethyl)amino]-*N*-[2-(1-piperidinyl)ethyl]-9*H*-purine-2-carboxamide, or a pharmaceutically acceptable salt or solvate thereof.

17. A compound as claimed in claim 1 wherein
R^1 is hydrogen or C_1-C_6 alkyl substituted by 1 or 2 substituents each independently selected from phenyl and naphthyl;
R^2 is hydrogen or C_1-C_6 alkyl;
A is C_1-C_6 alkylene; and
R^3 is phenyl, naphthyl, C_3-C_8 cycloalkyl, azetidinyl, pyrrolidinyl, piperidinyl, amino, -NH(C_1-C_6 alkyl) or -N(C_1-C_6 alkyl)$_2$, said phenyl, naphthyl, C_3-C_8 cycloalkyl, azetidinyl, pyrrolidinyl and piperidinyl being optionally substituted by one or more substituents each independently selected from C_1-C_6 alkyl, C_1-C_6 alkoxy, halo(C_1-C_6)alkyl, halo and cyano:
with the proviso that when R^3 is N-linked, optionally substituted-azetidinyl, -pyrrolidinyl or -piperidinyl, or is amino, -NH(C_1-C_6 alkyl) or -N(C_1-C_6 alkyl)$_2$, A is C_2-C_6 alkylene.

18. A pharmaceutical composition including a compound of the formula (I) or a pharmaceutically acceptable salt or solvate thereof, as claimed in any one of the preceding claims, together with a pharmaceutically acceptable excipient, diluent or carrier.

19. A compound of the formula (I) or a pharmaceutically acceptable salt, solvate or composition thereof, as claimed in any one claims 1 to 17 and 18, respectively, for use as a medicament.

20. The use of a compound of the formula (I) or of a pharmaceutically acceptable salt, solvate or composition thereof, as claimed in any one claims 1 to 17 and 18, respectively, for the manufacture of a medicament having A2a receptor agonist activity.

21. The use of a compound of the formula (I) or of a pharmaceutically acceptable salt, solvate or composition thereof, as claimed in any one claims 1 to 17 and 18, respectively, for the manufacture of an anti-inflammatory agent.

22. The use of a compound of the formula (I) or of a pharmaceutically acceptable salt, solvate or composition thereof, as claimed in any one claims 1 to 17 and 18, respectively, for the manufacture of a medicament for the treatment of a respiratory disease.

23. Use as claimed in claim 22 where the disease is selected from the group consisting of adult respiratory distress syndrome (ARDS), bronchitis, chronic bronchitis, chronic obstructive pulmonary disease, cystic fibrosis, asthma, emphysema, bronchiectasis, chronic sinusitis and rhinitis.

24. The use of a compound of the formula (I) or of a pharmaceutically acceptable salt, solvate or composition thereof, as claimed in any one claims 1 to 17 and 18, respectively, for the manufacture of a medicament for the treatment of septic shock, male erectile dysfunction, hypertension, stroke, epilepsy, cerebral ischaemia, peripheral vascular disease, post-ischaemic reperfusion injury, diabetes, rheumatoid arthritis, multiple sclerosis, psoriasis, dermatitis, allergic dermatitis, eczema, ulcerative colitis, Crohns disease, inflammatory bowel disease, *Heliobacter pylori* gastritis, non-*Heliobacter pylori*

gastritis, non-steroidal anti-inflammatory drug-induced damage to the gastro-intestinal tract or a psychotic disorder, or for wound healing.

25. A method of treatment of a mammal, including a human being, with a A2a receptor agonist including treating said mammal with an effective amount of a compound of the formula (I) or with a pharmaceutically acceptable salt, solvate or composition thereof, as claimed in any one claims 1 to 17 and 18, respectively.

26. A method of treatment of a mammal, including a human being, to treat an inflammatory disease including treating said mammal with an effective amount of a compound of the formula (I) or with a pharmaceutically acceptable salt, solvate or composition thereof, as claimed in any one claims 1 to 17 and 18, respectively.

27. A method of treatment of a mammal, including a human being, to treat a respiratory disease including treating said mammal with an effective amount of a compound of the formula (I) or with a pharmaceutically acceptable salt, solvate or composition thereof, as claimed in any one claims 1 to 17 and 18, respectively.

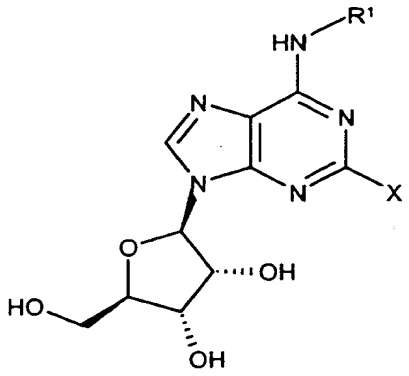
28. A method as claimed in claim 27 where the disease is selected from the group consisting of adult respiratory distress syndrome (ARDS), bronchitis, chronic bronchitis, chronic obstructive pulmonary disease, cystic fibrosis, asthma, emphysema, bronchiectasis, chronic sinusitis and rhinitis.

29. A method of treatment of a mammal, including a human being, to treat septic shock, male erectile dysfunction, hypertension, stroke, epilepsy, cerebral ischaemia, peripheral vascular disease, post-ischaemic reperfusion injury, diabetes, rheumatoid arthritis, multiple sclerosis, psoriasis, dermatitis, allergic dermatitis, eczema, ulcerative colitis, Crohns disease, inflammatory bowel

disease, *Heliobacter pylori* gastritis, non-*Heliobacter pylori* gastritis, non-steroidal anti-inflammatory drug-induced damage to the gastro-intestinal tract or a psychotic disorder, or for wound healing, including treating said mammal with an effective amount of a compound of the formula (I) or with a pharmaceutically acceptable salt, solvate or composition thereof, as claimed in any one claims 1 to 17 and 18, respectively.

30. A process for the preparation of a compound of the formula (I), or a pharmaceutically acceptable salt thereof, as claimed in claim 1 comprising

a) aminocarbonylation reaction of a compound of the formula:



(II)

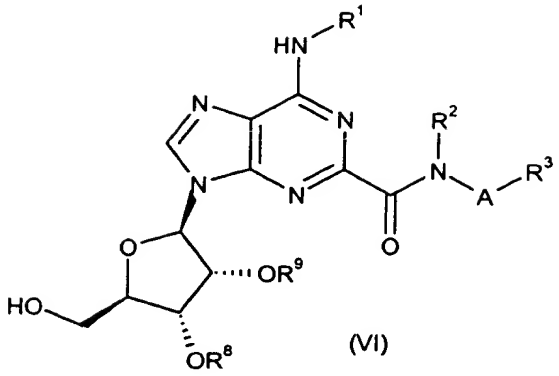
wherein R^1 is defined in claim 1 and X is a leaving group such as bromo, iodo, -$Sn(C_1$-C_{12} alkyl$)_3$ or CF_3SO_2O-, with a compound of the formula:

R^2NH-A-R^3

(III)

wherein A, R^2 and R^3 are as defined in claim 1, in the presence of carbon monoxide and a suitable coupling catalyst; or

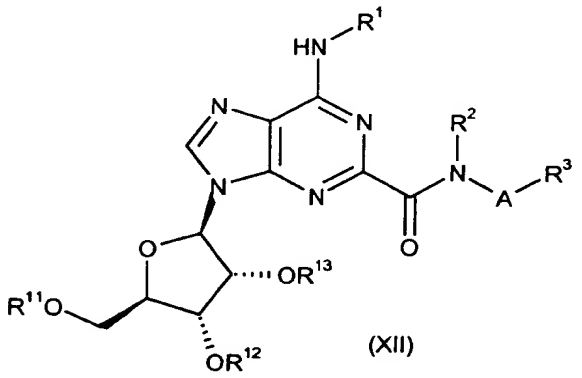
b) deprotection of a compound of the formula:



(VI)

wherein A, R^1, R^2 and R^3 are as defined in claim 1 and R^8 and R^9, when taken separately, are protecting groups, or, when taken together, are a protecting group; or

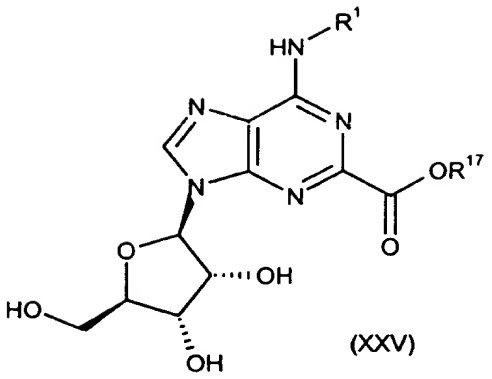
c) deprotection of a compound of the formula:



(XII)

wherein A, R^1, R^2 and R^3 are as defined in claim 1 and R^{11}, R^{12} and R^{13}, taken separately, are protecting groups, or R^{11} is a protecting group and R^{12} and R^{13}, taken together, are a protecting group: or

d) reaction of a compound of the formula:

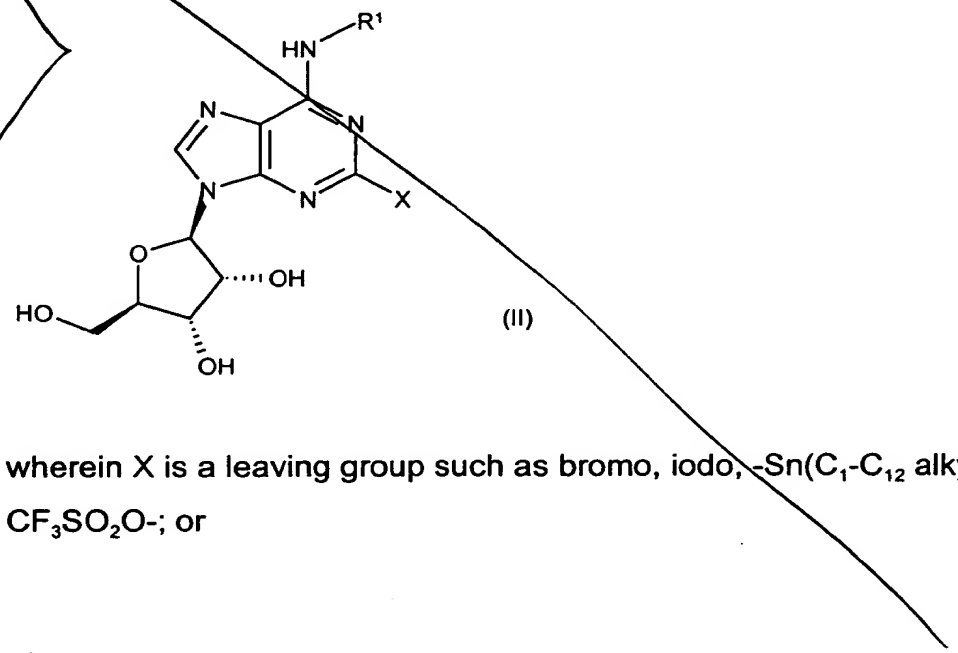


(XXV)

wherein R^1 is as defined in claim 1 and R^{17} is H or an ester-forming group, with a compound of the formula (III) as defined in part (a), and, where R^{17} is H, in the presence of a peptide coupling agent:

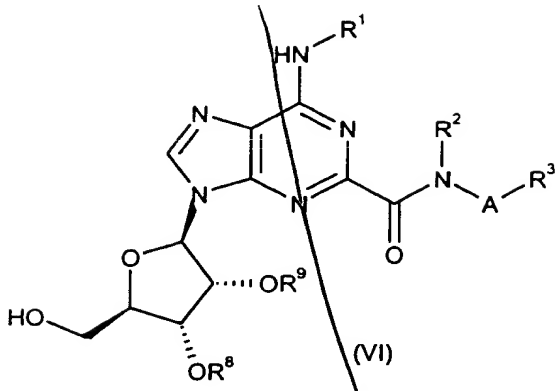
any one of said processes being optionally followed by conversion to a pharmaceutically acceptable salt thereof.

31. A compound of the formula:



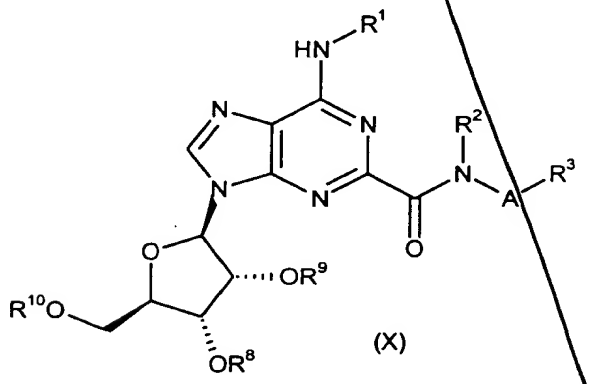
(II)

wherein X is a leaving group such as bromo, iodo, -Sn(C_1-C_{12} alkyl)$_3$ or CF_3SO_2O-; or



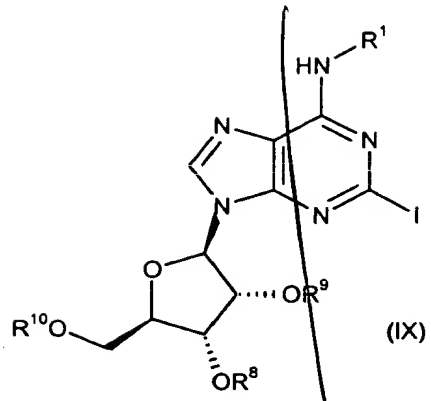
(VI)

wherein R^8 and R^9, when taken separately, are protecting groups, or, when taken together, are a protecting group; or



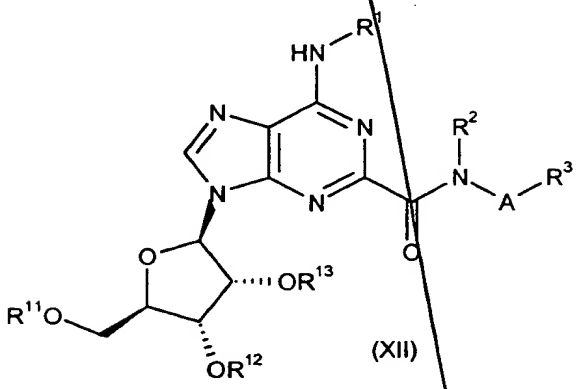
(X)

wherein R^8 and R^9, when taken separately, are protecting groups, or, when taken together, are a protecting group, and R^{10} is a protecting group; or



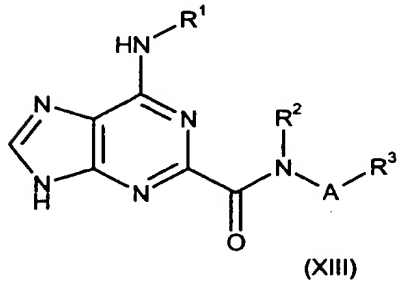
(IX)

wherein R^8 and R^9, when taken separately, are protecting groups, or, when taken together, are a protecting group, and R^{10} is a protecting group; or



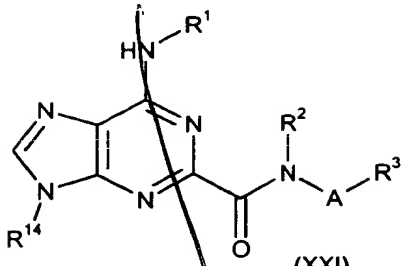
(XII)

wherein R^{11}, R^{12} and R^{13}, taken separately, are protecting groups, or R^{11} is a protecting group and R^{12} and R^{13}, taken together, are a protecting group; or



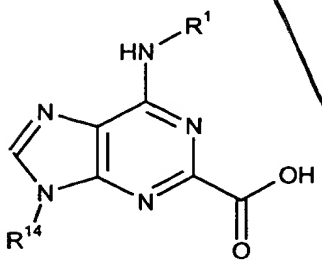
(XIII)

; or



(XXI)

wherein R^{14} is a protecting group; or

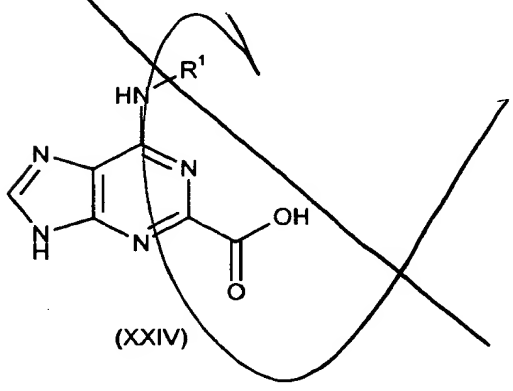


(XXII)

wherein R^{14} is a protecting group;

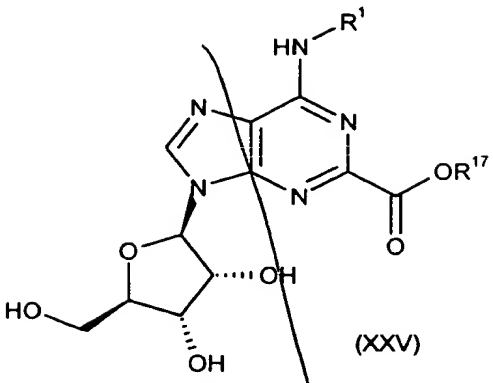
and A, R^1, R^2 and R^3 are as defined in claim 1.

32. A compound of the formula:



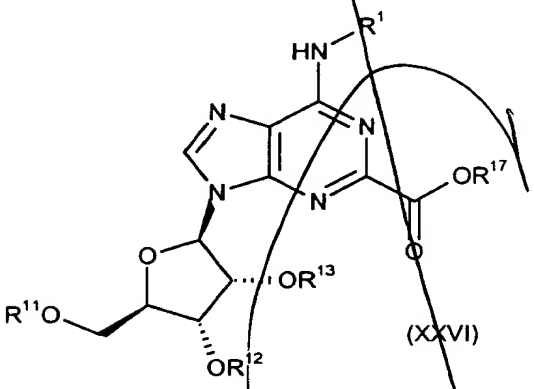
(XXIV)

; or



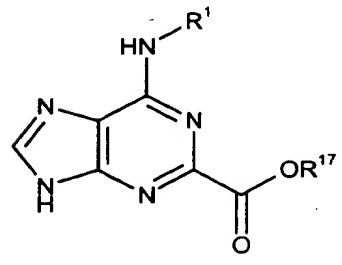
(XXV)

wherein R^{17} is H or an ester-forming group; or



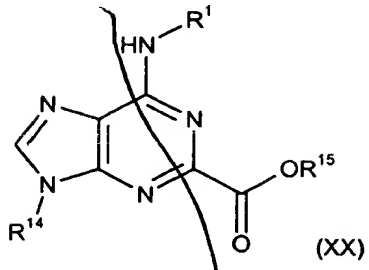
(XXVI)

wherein R^{11}, R^{12} and R^{13}, taken separately, are protecting groups, or R^{11} is a protecting group and R^{12} and R^{13}, taken together, are a protecting group, and R^{17} is an ester-forming group; or



(XXVII)

wherein R^{17} is an ester-forming group; or



(XX)

wherein R^{14} is a protecting group and R^{15} is C_1-C_4 alkyl:

and R^1 is C_1-C_6 alkyl optionally substituted by 1 or 2 substituents each independently selected from phenyl and naphthyl, said phenyl and naphthyl being optionally substituted by C_1-C_6 alkyl, C_1-C_6 alkoxy, halo or cyano.

33. A compound as claimed in any one of claims 31 and 32 wherein R^1 is 2,2-diphenylethyl, R^2 is H and/or –A-R^3 is 2-(1-piperidinyl)ethyl.

34. A compound of the formula (II) as claimed in claim 31 wherein X is iodo.

35. A compound of the formula (VI), (IX) or (X) as claimed in claim 31 wherein R^8 and R^9 when taken seperately are each acetyl or benzoyl or when taken together are 1,1-dimethylmethylene.

36. A compound of the formula (IX) or (X) as claimed in claim 31 wherein R^{10} is a silyl protecting group, preferably t-butyldimethylsilyl or t-butyldiphenylsilyl.

37. A compound of the formula (XII) as claimed in claim 31 wherein R^{11}, R^{12} and R^{13} when taken seperately are each acetyl or benzoyl, or R^{12} and R^{13} when taken together are 1,1-dimethylmethylene.

38. A compound of the formula (XXI) or (XXII) as claimed in claim 31, or (XX) as claimed in claim 32, wherein R^{14} is tetrahydro-2H-pyran-2-yl.

39. A compound of the formula (XXV), (XXVI) or (XXVII) as claimed in claim 32 wherein R^{17} is C_1-C_4 alkyl, preferably methyl or ethyl.

40. A compound of the formula (XXVI) as claimed in claim 32 wherein R^{11}, R^{12} and R^{13} when taken seperately are each acetyl or benzoyl, or R^{12} and R^{13} when taken together are 1,1-dimethylmethylene.

Add B8